

**REMARKS**

The Office Action mailed August 15, 2003 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-28 are now pending in this application. Claims 1-23 stand rejected. Claims 24-28 are newly added. A fee calculation sheet is submitted herewith for newly added Claims 24-28.

The objection to the drawings under 37 C.F.R. 1.83(a) is respectfully traversed. Specifically, a figure has been added that illustrates a collimator containing a filter in accordance with Claim 6. No new matter has been added. For the reasons set forth above, Applicant respectfully requests the objection to the drawings be withdrawn.

The objection to the specification and Figure 4 is respectfully traversed. Specifically, while Kvp is a scalar and not a vector, Applicant respectfully traverses the assertion in the office action that "the x-ray tube Kvp is varied along the Z axis is erroneous". Rather, Applicant submits that the x-ray tube Kvp is different at different Z locations, in some embodiments, and having different Kvps at different Z locations is equivalent to the statement that "the x-ray tube Kvp is varied along the Z axis", and accordingly the cited language is not erroneous. For at least the reasons above, Applicant respectfully requests the objection to the specification and Figure 4 be withdrawn.

The rejection of Claims 3 and 18 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. Claims 3 and 18 have been amended to remove the terms "a single scan". Applicant respectfully submits that one skilled in the art, after reading the specification in light of the figures, would be able to understand and duplicate that which Applicant regards as the invention. Applicant respectfully submits that Claims 3 and 18 particularly point out and distinctly claim the subject matter. For at least the above reasons, Applicant respectfully requests that the rejection of Claims 3 and 18 under 35 U.S.C. § 112, second paragraph, be withdrawn.

The rejection of Claims 1-23 under 35 U.S.C. § 102(b) as being anticipated by Yamazaki et al. (U.S. Pat. No. 5,570,403) is respectfully traversed.

Yamazaki et al. describe a dual energy scanning type x-ray CT apparatus including two adjacent detectors (1 and 2). The detectors are provided to detect different energy characteristics from each other. Column 4, lines 13-15.

Claim 1 recites a computed tomographic (CT) imaging system for performing a CT scan, wherein the CT system includes "a detector array comprising a plurality of detector cells; a processor operationally coupled to said detector array, said processor configured to: receive first data regarding a first x-ray spectral range from a first detector cell from a scan with an x-ray source pitch of one detector cell; receive second data regarding a second x-ray spectral range different from the first x-ray spectral range from a second detector cell different from the first detector cell; and determine spectral information from the first data and the second data".

Yamazaki et al. do not describe nor suggest the system as recited in Claim 1. More specifically, Yamazaki et al. do not describe nor suggest a system that includes a detector array including a plurality of detector cells, a processor operationally coupled to the detector array, wherein the processor is configured to receive first data regarding a first x-ray spectral range from a first detector cell from a scan with an x-ray source pitch of one detector cell, receive second data regarding a second x-ray spectral range different from the first x-ray spectral range from a second detector cell different from the first detector cell, and determine spectral information from the first data and the second data. Moreover, Yamazaki et al. do not describe nor suggest a system that includes a processor configured to "receive first data regarding a first x-ray spectral range from a first detector cell from a scan with an x-ray source pitch of one detector cell". Rather, Yamazaki et al. describe an x-ray CT apparatus including two adjacent detectors provided to detect different energy characteristics from each other. Accordingly, for at least the reasons set forth above, Applicant respectfully submits that Claim 1 is patentable over Yamazaki et al.

Claims 2-13 depend from independent Claim 1 which is submitted to be in condition for allowance. When the recitations of Claims 2-13 are considered in combination with the recitations of Claim 1, Applicant respectfully submits that dependent Claims 2-13 are also patentable over Yamazaki et al.

Claim 14 recites a method for scanning an object, wherein the scanning includes scanning an object by at least one of "scanning the object with an x-ray pitch of one detector cell and while varying a peak kiloelectronvolt to an x-ray tube; scanning the object with an x-ray pitch of one detector cell and with a filter such that a plurality of x-ray spectra are received by a detector array; and scanning the object with an x-ray pitch of one detector cell and such that elements of a detector array discriminate between a plurality of x-ray spectra and generate signals based on the x-ray spectra".

Yamazaki et al. do not describe nor suggest the method as recited in Claim 14. More specifically, Yamazaki et al. do not describe nor suggest any of scanning the object with an x-ray pitch of one detector cell and while varying a peak kiloelectronvolt to an x-ray tube; scanning the object with an x-ray pitch of one detector cell and with a filter such that a plurality of x-ray spectra are received by a detector array; and scanning the object with an x-ray pitch of one detector cell and such that elements of a detector array discriminate between a plurality of x-ray spectra and generate signals based on the x-ray spectra. Rather, Yamazaki et al. describe an x-ray CT apparatus including two adjacent detectors provided to detect different energy characteristics from each other. Accordingly, for at least the reasons set forth above, Applicant respectfully submits that Claim 14 is patentable over Yamazaki et al.

Claim 15 recites a method for determining the presence of an analyte in an object with a computed tomographic (CT) imaging system, wherein the method includes "receiving first data regarding a first x-ray spectral range from a first detector cell from a scan with an x-ray pitch of one detector cell; receiving second data regarding a second x-ray spectral range different from the first x-ray spectral range from a second detector cell different from the first detector cell; and determining spectral information from the first data and the second data".

Yamazaki et al. do not describe nor suggest the method as recited in Claim 15. More specifically, Yamazaki et al. do not describe nor suggest a method including receiving first data regarding a first x-ray spectral range from a first detector cell from a scan with an x-ray pitch of one detector cell, receiving second data regarding a second x-ray spectral range different from the first x-ray spectral range from a second detector cell different from the first

detector cell, and determining spectral information from the first data and the second data. Rather, Yamazaki et al. describe an x-ray CT apparatus including two adjacent detectors provided to detect different energy characteristics from each other. Accordingly, for at least the reasons set forth above, Applicant respectfully submits that Claim 15 is patentable over Yamazaki et al.

Claim 16 recites a computed tomographic (CT) imaging system for performing a CT scan, wherein the CT system includes "a detector array comprising a plurality of detector cells; an x-ray source positioned to emit x-rays toward said detector array; and a processor operationally coupled to said detector array, said processor configured to: receive first data regarding a first x-ray spectral range from a first detector cell from a scan with an x-ray source pitch of one detector cell; receive second data regarding a second x-ray spectral range different from the first x-ray spectral range from a second detector cell different from the first detector cell; and determine spectral information from the first data and the second data".

Yamazaki et al. do not describe nor suggest the system as recited in Claim 16. More specifically, Yamazaki et al. do not describe nor suggest a system including a detector array including a plurality of detector cells, an x-ray source positioned to emit x-rays toward the detector array, and a processor operationally coupled to the detector array, wherein the processor is configured to "receive first data regarding a first x-ray spectral range from a first detector cell from a scan with an x-ray source pitch of one detector cell; receive second data regarding a second x-ray spectral range different from the first x-ray spectral range from a second detector cell different from the first detector cell; and determine spectral information from the first data and the second data". Rather, Yamazaki et al. describe an x-ray CT apparatus including two adjacent detectors provided to detect different energy characteristics from each other. Accordingly, for at least the reasons set forth above, Applicant respectfully submits that Claim 16 is patentable over Yamazaki et al.

Claims 17-23 depend from independent Claim 16 which is submitted to be in condition for allowance. When the recitations of Claim 17-23 are considered in combination

with the recitations of Claim 16, Applicant respectfully submits that dependent Claim 17-23 is also patentable over Yamazaki et al.

For the reasons set forth above, Applicant respectfully requests that the Section 102 rejections of Claims 1-23 be withdrawn.

Newly added Claim 24 recites a CT imaging system. The references cited in the Office Action do not describe or suggest a CT imaging system as recited in Claim 24. Accordingly, Applicant respectfully submits that Claim 24 is patentable over the cited art.

Newly added Claim 25 depends from independent Claim 24, which is submitted to be in condition for allowance and patentable over the cited art. For at least the reasons set forth above, Applicant respectfully submits that Claim 25 is also patentable over the cited art.

Newly added Claim 26 recites a CT imaging system. The reference cited in the Office Action does not describe or suggest a CT imaging system as recited in Claim 26. Accordingly, Applicant respectfully submits that Claim 26 is patentable over the cited art.

Newly added Claims 27-28 depend from independent Claim 26, which is submitted to be in condition for allowance and patentable over the cited art. For at least the reasons set forth above, Applicant respectfully submits that Claims 17-28 are also patentable over the cited art.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



Thomas M. Fisher  
Registration No. 47,564  
ARMSTRONG TEASDALE LLP  
One Metropolitan Square, Suite 2600  
St. Louis, Missouri 63102-2740  
(314) 621-5070

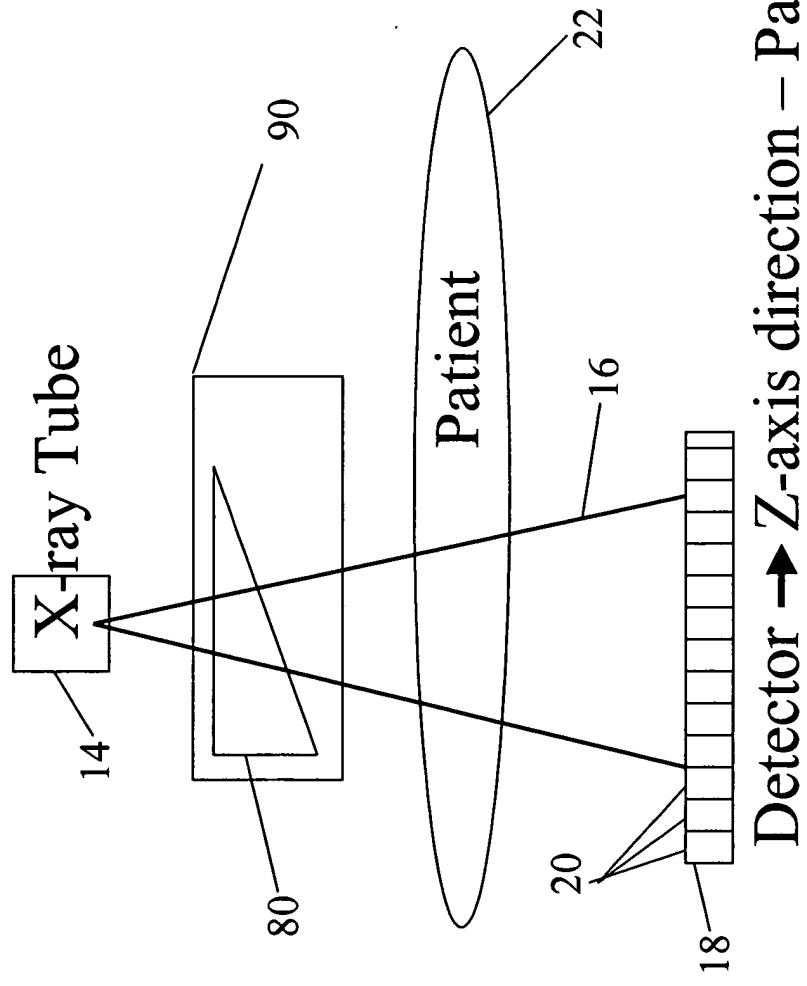


Figure 14